

NATIONAL WEATHER SERVICE INSTRUCTION 10-401

APRIL 19, 2005

Operations and Services

Fire Weather Services, NWSPD 10-4

FIRE WEATHER SERVICES PRODUCT SPECIFICATION

NOTICE: This publication is available at: <http://www.nws.noaa.gov/directives/>

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Type of Issuance: Routine.

SUMMARY OF REVISIONS:

This directive supersedes NWSI 10-401, "Fire Weather Services Product Specification" dated April 22, 2004. The following revisions were made to this instruction:

- (1) Section 2.3.4a – To avoid customer confusion, headlines from other public products are prohibited in the FWF.
- (2) Section 2.3.4c – Outlook period can now be broken into 12 hour segments.
- (3) Section 2.3.4g – Wind description more explicit along with sub-descriptors. Also in FWF examples in 2.3.5.
- (4) Section 3.3.4h,i – LAL optional in NFDRS forecast per Fire Danger Working Team guidance.
- (5) Section 4.2.1 – Added reference to backup manual form for spot requests (WS Form D-1).
- (6) Section 5 – Updated for segmentation of RFWs and inclusion of VTEC (delayed).
- (7) Section 5.2.1 – put "or approved NWS software" in addition to WWA given uncertainties in that program.
- (8) Added Appendix B...the Spot Forecast Manual Request Form D-1

The VTEC information in the RFW product format and examples will be operationally implemented at all WFOs in the Fall of 2005. The RFW is the only Fire Weather product scheduled to use VTEC coding. Information regarding implementation of VTEC is available on the Internet at <http://www.nws.noaa.gov/os/vtec/>.

Signed	4/5/05
Dennis McCarthy	Date
Director, Office of Climate, Water, and Weather Services	

Fire Weather Services Product Specification

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1. Introduction. Weather Forecast Office (WFO) forecast staff will issue a core suite of fire weather products consisting of the following for their fire weather service area:

- a. Fire Weather Planning Forecasts (fire weather zones)
- b. National Fire Danger Rating System Forecasts (NFDRS)
- c. Spot Forecasts
- d. Fire Weather Watches
- e. Red Flag Warnings

Issuance of optional products in the national fire weather suite including smoke and land management forecasts, and fire danger statements is under the discretion of the Regional Headquarters and WFOs.

WFOs may provide localized services or products to support customer requirements assuming these services or products remain within the bounds of the NWS mission and do not conflict with the national fire weather services program or product suite. These local applications will be coordinated with Regional Headquarters and included in the WFO or consolidated WFO Fire Weather Annual Operating Plan (AOP, NWS Instruction 10-404). The Office of Climate Water and Weather Services (OCWWS) will be responsible for approving newly developed products or innovations for inclusion into the national fire weather services product suite. Implementation of new products and services must comply with NWS Instruction 10-102, New or Enhanced Products and Services.

WFOs with no public wildlands (federal, state, or local), fire season, or customer requirements may be exempt from producing all or a portion of the core national fire weather product suite with approval from both the associated Regional Headquarters and OCWWS.

Meteorologists-in-Charge (MICs) and WFO fire weather program leaders will annually reassess the criteria for issuance, frequency of issuance, format, content, dissemination, etc. for each fire weather product. This information should be clearly defined in the WFO or consolidated AOP.

Examples of the five required products are shown in the appropriate section or in Appendix A.

Note: World Meteorological Organization (WMO) headers for the products in this instruction are shown for the continental United States. Alaska products use AK in place of US, e.g., instead of FNUS5i, Alaska FWFs will use FNAKii. Similarly Hawaiian products use HW in place of US, e.g., FNHW5i, while Guam and Commonwealth of the Northern Marianas use MY in place of US, e.g., FNMY50.

2. Fire Weather Planning Forecast (Product Category FWF, WMO Header FNUS5i).

2.1 Mission Connection. The Fire Weather Planning Forecast is a zone-type product used by land management personnel primarily for input in decision-making related to pre-suppression and other planning. The decisions impact firefighter safety, protection of the public and property, and resource allocation.

2.2 Issuance Guidelines.

2.2.1 Creation Software. Weather Forecast Offices (WFOs) may use formatters from the Interactive Forecast Preparation System (IFPS) or locally/regionally developed formatters.

2.2.2 Issuance Criteria. The FWF is a routine product and should be issued at least once daily during the local fire season. The AOP will contain actual issuance criteria and frequency of issuance information based on customer needs.

2.2.3 Issuance Time. Issuance times will be noted in the WFO or consolidated WFO AOP based on customer needs.

2.2.4 Valid Time. The FWF is valid from time of issuance through day five (optional day seven).

2.2.5 Product Expiration Time. The FWF expires at the next routine issuance time, generally 12 to 24 hours from issuance.

2.2.6 Event Expiration Time. None.

2.3 Technical Description.

2.3.1 UGC Type. FWFs will use fire weather zone numbers and the zone format (Z) of the Universal Generic Code (UGC) to identify each specific forecast zone within a FWF segment. Where defined as such by the WFO, fire weather zone numbers may be the same as public zone numbers.

2.3.2 Mass News Disseminator (MND) Broadcast Instruction Line. None.

2.3.3 MND Product Type Line. The FWF MND is "FIRE WEATHER PLANNING FORECAST FOR YOUR_AREA", where "YOUR_AREA" is replaced appropriately.

2.3.4 Content. Include the following elements in both the narrative and tabular versions of the Fire Weather Planning Forecast product. Some parameters, as noted, are optional.

- a. Headlines. An overview headline is required when Red Flag Warnings and/or Fire Weather Watches are in effect. The headline will include the warning type, location, reason for issuance (e.g., high winds and low humidity), and effective time period (i.e., the same format and information as in the Red Flag Warning headline, section 5.3.4.1). Describe the location in terms of geographic or other easily identified markers, such as forests, parks, cities, towns, rivers, or highways. Also, include a headline for a warning and/or watch in each appropriate zone grouping. Forecasters are encouraged to use the same headline format (type, location, reasoning, and time period) in the individual segments as in the top headline. Significant trends of locally-defined critical weather elements should

be headlined for non-watch/warning periods. To avoid confusion and possible inconsistencies among products, headlines for other watch-warning events from the public program (i.e., those headlined in the Zone Forecast Product as detailed in 10-503) should not be included in the FWF.

- b. Discussion. The discussion should be a brief, clear, non-technical description of weather patterns that influence the weather in the forecast area. The emphasis of the discussion should be on the first two days of the forecast period, though latter periods may be included if significant weather is expected to impact safety or operations, and the forecaster has reasonable confidence the weather will occur.
- c. Forecast Period. The FWF product should have a minimum of three 12-hour time periods. Insert locally-established weather elements, if any, in the Optional Elements section at the end of each time period in the narrative version and after the required elements in the tabular version. All issuances should have a general outlook section valid to day 5. Days 6 and 7 are optional. In this general outlook section, a forecast period may be either 12 or 24 hours depending on local customer requirements.
- d. Sky/Weather. Forecasters should follow the same guidelines for sky/weather and weather descriptors as those used in the Public Zone Forecasts (Refer to NWS Instruction 10-503) with the following exception. WFOs may optionally use the term “Widely Scattered” for the qualifying term when forecasting 20% POPs. This designation keeps the qualifier consistent with Lightning Activity Level (LAL) and thunderstorm coverage from the National Fire Danger Rating System (NFDRS).
- e. Maximum or Minimum temperatures and 24-hour temperature trends. Temperature trends are comparisons to the previous day’s values and are optional.
- f. Maximum or Minimum relative humidity and a 24-hour trend (optional). Minimum relative humidity should be forecast during the daytime and the maximum relative humidity during the nighttime. The range of the relative humidity forecasts should be 5 percent. However, where large elevation differences exist within a zone, ranges of 10 percent or more may be forecast, along with explanations for the larger ranges. In the narrative versions of the FWF, qualitative descriptions (poor, moderate, good) of nighttime humidity recovery are left as a regional or WFO option.
- g. Wind. Indicate the prevalent direction and speed of the wind for each time period. Maximum gusts, erratic winds, and wind shifts should be mentioned when deemed significant. Wind directions should not be abbreviated in the narrative-style forecast. The description of the wind should be indicated (i.e., either 20-foot 10-minute average, or 33 foot 2-minute average). Other sub-descriptors can be added such as slope/valley, ridge top, AM/PM, etc. Use the 8-point compass for

the wind direction, or in complex terrain, indicate slope or valley oriented wind direction (upslope/downvalley, etc.).

- h. 3-7 Day Outlook (days 6, 7 optional). The outlook period may be located at the end of the FWF and reflect an outlook for the entire FWF area, or optionally, an outlook period may be located at the end of each zone segment and reflect an outlook for that particular segment. Weather elements in the outlook period may include any or all of the mandatory day 1 and day 2 forecast elements. Forecasters will include the wind in the 3 to 5 day period and, when significant, beyond day 5 if appropriate. Wind forecasts should reflect the most significant synoptically driven wind affecting fire operations or ignition. The criteria can be locally or regionally derived, but the suggested threshold is a sustained synoptic scale wind of 15 miles an hour or more (20 foot 10 minute average wind). Forecasters should insert local phraseology for winds less than 15 miles an hour (e.g., upslope/downslope winds less than 15 miles an hour", "light winds", "winds generally less than 15 mph", etc.), or alternatively, use the actual representative wind (e.g., Northwest wind 5-10 mph). Critical humidity conditions to 5 days (or 7 days if appropriate) as established by local customers in the AOP, should be included.

Depending on local user requirements, forecasters may add optional elements below the required set of forecast elements per exhibits 2-1, 2-2, and 2-3. WFOs have the choice of including the local optional elements section in as many periods as desired in both the morning and afternoon narrative formats. Examples of user-requested optional elements are: transport winds, mixing heights, lightning activity level (LAL), Haines index, chance of wetting rain (CWR), etc..

2.3.5 Format. Forecasters will compose the product in either the standardized narrative format (Exhibit 2-1, 2-2) or the standardized tabular format (Exhibit 2-3). The standard format used by an office depends on customer requirements.

Exhibit (2-1) - Format of a morning narrative Fire Weather Planning Forecast.

FNUS5i KNNN DDHHMM
FWFNNN

FIRE WEATHER PLANNING FORECAST FOR name of area
NATIONAL WEATHER SERVICE CITY STATE
TIME-DATE (example: 900 AM MDT FRI JUL 10 1999)

...HEADLINE... (REQUIRED for Red Flag Warnings and Fire Weather Watches....significant feature(s) at other times recommended)

.DISCUSSION...(concise, clear, non-technical explanation of the current/forecasted fire weather)

SSZXXX-XXX>XXX-DDHHMM- (UGC/FIPS CODING)
GEOGRAPHICAL DESCRIPTORS (including land management governing units and optional fire weather zone numbers)
TIME-DATE (repeat)

...RED FLAG WARNING/FIRE WEATHER WATCH HEADLINE (as needed in each appropriate

zone grouping)...

.TODAY...

SKY/WEATHER.....

MAX TEMPERATURE.....

24 HR TREND..... (optional)

MIN HUMIDITY.....

24 HR TREND..... (optional)

WIND.(wind defn).... (include definition, e.g. 20 FT/10-min avg, 33FT/2-min avg)

(slope/valley..valleys/lwr slopes..etc.)

(ridge top...ridges/upr slopes..etc.)

LOCAL OPTIONAL ELEMENTS...(transport winds, mixing heights, LAL, Haines, CWR, etc.)

.TONIGHT...

SKY/WEATHER.....

MIN TEMPERATURE.....

24 HR TREND..... (optional)

MAX HUMIDITY.....

24 HR TREND..... (optional)

WIND.(wind defn).... (include definition, e.g. 20 FT/10-min avg, 33FT/2-min avg)

(slope/valley..valleys/lwr slopes..etc.)

(ridge top...ridges/upr slopes..etc.)

LOCAL OPTIONAL ELEMENTS...(transport winds, mixing heights, LAL, Haines, CWR, etc.)

.TOMORROW...

SKY/WEATHER.....

MAX TEMPERATURE.....

MIN HUMIDITY.....

WIND.(wind defn).... (include definition, e.g. 20 FT/10-min avg, 33FT/2-min avg)

(slope/valley..valleys/lwr slopes..etc.)

(ridge top...ridges/upr slopes..etc.)

LOCAL OPTIONAL ELEMENTS...(transport winds, mixing heights, LAL, Haines, CWR, etc.)

(.FORECAST DAYS 3 THROUGH 7 may optionally be provided for each zone segment)

\$\$

[forecast for next geographical descriptor and fire weather zone group]

\$\$

.FORECAST DAYS 3 THROUGH 7... (winds must be included days 3-5, days 6 and 7 if appropriate; other elements per locally-established policy; may be in each zone segment versus this location; may optionally be presented as 12 hour periods)

.DAY3... (days can be combined, e.g., .SUNDAY THROUGH TUESDAY...)

.DAY4...

.DAY5...

.DAY6... (days 6 and 7 optional)

.DAY7...

.OUTLOOK FOR DAY MONTH DATE THROUGH DAY MONTH DATE (per local-established policy - Days 8-14, 30 and 90 day outlooks when issued)

\$\$

(ridge top...ridges/upr slopes..etc.)
 LOCAL OPTIONAL ELEMENTS...(transport winds, mixing heights, LAL, Haines, CWR,
 etc.)

.FOLLOWING DAY (Day 2)...

SKY/WEATHER.....

MAX TEMPERATURE.....

MIN HUMIDITY.....

WIND.(wind defn).... (include definition, e.g. 20 FT/10-min avg, 33FT/2-min
 avg)

(slope/valley..valleys/lwr slopes..etc.)

(ridge top...ridges/upr slopes..etc.)

LOCAL OPTIONAL ELEMENTS...(transport winds, mixing heights, LAL, Haines, CWR,
 etc.)

(.FORECAST DAYS 3 THROUGH 7 may optionally be provided for each zone segment)

\$\$

[forecast for next geographical descriptor and fire weather zone group]

\$\$

.FORECAST DAYS 3 THROUGH 7...(winds must be included days 3-5, days 6 and 7 if
 appropriate; other elements per locally-established policy; may be in each
 zone segment versus this location; if day 2 not included above, then this
 section should start at day 2; may optionally be presented as 12 hour periods)

.DAY3... (days can be combined, e.g., .SUNDAY THROUGH TUESDAY...)

.DAY4...

.DAY5...

.DAY6... (days 6 and 7 optional)

.DAY7...

.OUTLOOK FOR DAY MONTH DATE THROUGH DAY MONTH DATE (per local-established
 policy - Days 8-14, 30 and 90 day outlooks when issued)

\$\$

Exhibit (2-3) - Format for the Tabular Fire Weather Planning Forecast. Format shown is for the
 afternoon issuance; morning issuance is identical except for three periods instead of four. **Bold
 text** denotes required elements.

FNUS5i KNNN DDHHMM

FWFNNN

FIRE WEATHER PLANNING FORECAST FOR name of area

NATIONAL WEATHER SERVICE CITY STATE

TIME-DATE (example: 300 PM EST TUE JAN 1 2001)

...HEADLINE... (REQUIRED for Red Flag Warnings and Fire Weather
 Watches...significant feature(s) at other times recommended)

.DISCUSSION...(concise, clear, non-technical explanation of the
 current/forecasted fire weather)

SSZXXX-XXX>XXX-DDHHMM- (UGC/FIPS coding)

GEOGRAPHIC DESCRIPTORS (such as land management units, political boundaries,
 geographic features, and/or fire weather zones)

TIME-DATE (repeated)

...RED FLAG WARNING/FIRE WEATHER WATCH HEADLINE (as needed in each appropriate zone grouping) ...

PARAMETER	TONIGHT	TOMORROW	TOMORROW NIGHT	FOLLOWING DAY
CLOUD COVER	(CLOUDY, MCLDY, PCLDY, CLEAR)			
CHANCE PRECIP (%)	(Percent chance precip 0-100 or areal coverage)			
PRECIP TYPE	(NONE, DRIZL, FRZ RAIN, SNOW/RAIN, RAIN, TSHWR)			
TEMP (24H TREND)	(Max/min temps as zone avg or extremes, trend not included in 3 rd or 4 th period PM forecasts)			
RH % (24H TREND)	(Max/min relative humidity as zone avg or extremes, trend not included in 3 rd or 4 th period PM forecasts)			
20FT WND MPH (VALLEY/AM)	(8 pt compass or upslope/downslope and MPH w gusts, can be VALLEY or AM wind)			
20FT WND MPH (RIDGE/PM)	(8 pt compass and MPH w/gusts, can be PM or ridge top winds)			
(wind above may also be	33FT WND MPH assuming preference of customers)			
PRECIP DURATION	(Hours of precip in period)			
PRECIP BEGIN	(Onset of precip probability)			
PRECIP END	(Cessation of precip probability)			
PRECIP AMOUNT	(Zone avg QPF inches)			
LAL	(Lightning Activity Level)			
HAINES INDEX (LOW)	(As applicable)			
HAINES INDEX (MID)	(As applicable)			
HAINES INDEX (HIGH)	(As applicable)			
MIXING HGT (AGL/MSL)	(Feet or meters)			
TRANSPORT WIND (KTS)	(8 pt compass)			
VENT RATE (KT-FT)	(Mixing height times transport wind)			
DISPERSION	(Locally defined category, e.g. GOOD)			
SUNSHINE HOURS	(Total hours of sun)			
(OTHER LCL OPTIONS)	???	???		

REMARKS...APPROPRIATE REMARKS TO ADD VALUE AND MARK SIGNIFICANT WEATHER CHANGES. INSERT 'NONE' IF NONE.

(.FORECAST DAYS 3 THROUGH 7 may optionally be provided for each zone segment)

\$\$

[forecast for next geographical descriptor and fire weather zone group]

\$\$

.FORECAST FOR DAYS 3 THROUGH 7... (wind required days 3-5, days 6 and 7 if appropriate; other elements per locally-established policy; days 3-7 may be grouped in any combination; may be in each zone segment versus this location; may optionally be presented as 12 hour periods)

.DAY 3...

.DAY 4...

.DAY 5...

.DAY 6... (days 6 and 7 optional)

.DAY 7...

.OUTLOOK (per local-established policy - Days 8-14, 30 and 90 day outlooks when issued)

\$\$

2.4 Updates and Corrections. The FWF will be updated when a Fire Weather Watch or a

Red Flag Warning is issued or cancelled, or when forecast elements are deemed unrepresentative. The FWF will be corrected when a typographical/format error is detected.

3. National Fire Danger Rating System (NFDRS) Forecast (Product Category FWM, WMO Header FNUS8i).

3.1 Mission Connection. The National Fire Danger Rating System measures wildland fire danger at observation sites throughout the contiguous United States. The National Weather Service role in NFDRS is forecasting weather input which, combined with user input, allows the NFDRS software to predict the next day's fire danger indices. These indices impact agency resource management decisions, firefighter safety, and protection of the public and property.

3.2 Issuance Guidelines.

3.2.1 Creation Software. The AWIPS or any other text editor can be used to generate the FWM.

3.2.2 Issuance Criteria. The NFDRS forecast is a routine product. Where requested by the customer, forecasts will be issued at least once a day during the locally determined fire season. A current observation must be received for a NFDRS forecast to be generated.

3.2.3 Issuance Time. Weather observations valid for approximately 1300 Local Standard Time (LST) are taken by the land management agencies and transmitted through AWIPS using the FWO product ID. This product should have a header above the data which states “**Listing of Observations**”. Forecasters will use these observations as a basis for generating forecasts valid 24 hours later (the NFDRS forecast), so NFDRS forecast issuance times are dependent on the arrival of these observations. Observations generally arrive in the mid-afternoon hours and forecasts follow soon thereafter.

3.2.4 Valid Time. NFDRS forecasts are valid 24 hours from the time of the observation (1300 LST).

3.2.5 Product Expiration Time. None.

3.2.6 Event Expiration Time. None.

3.3 Technical Description.

3.3.1 UGC Type. None.

3.3.2 MND Broadcast Instruction Line. None.

3.3.3 MND Product Type Line. None.

3.3.4 Content. Forecasters should include the following in the NFDRS forecast:

- a. **ZONE/FCST** Shows whether this forecast is for an NFDRS zone or individual station. Zone average trends can be used when enough observations are available for the zone area. Choice between zone or individual station forecasts should be worked out in the AOP with fire weather customers.
- b. **NO** NFDRS Zone Number (or individual NFDRS site number)
- c. **YYMMDD** Year, month, and day valid forecast time
- d. **13** Always 1300 LST
- e. **WX** Weather valid at 1300 LST tomorrow. Valid entries are:
 - 0 clear
 - 1 scattered clouds (1/8 to 4/8)
 - 2 broken clouds (5/8 to 7/8)
 - 3 overcast clouds (more than 7/8)
 - 4 foggy
 - 5 drizzle
 - 6 raining
 - 7 snowing or sleeting
 - 8 showers (in sight or at the station)
 - 9 thunderstorm
 (Categories 5, 6, or 7 sets NFDRS index to 0)
- f. **TEMP** Temperature in deg F valid at 13 LST (or temperature trend + or -)
- g. **RH** Relative humidity in percent valid at 13 LST (or RH trend + or -)
- h. **LAL1** Lightning Activity Level 1400 LST to 2300 LST (optional)
- i. **LAL2** Lightning Activity Level 2300 LST to 2300 LST (optional)
- j. **WDIR** Use only for point forecast (FCST) version. Enter direction using sixteen point compass (N, NNE, NE, ENE, etc.) valid at 13 LST (20 ft level/10 minute average).
- k. **WSPD** Enter wind speed in mph valid at 13 LST (or wind speed trend + or -, 20 ft level/10 minute average)
- l. **10HR** 10 hour timelag fuel moisture in percent valid at 13 LST (or trend + or -)
- m. **Tx** Max temperature from 1300 LST to 1300 LST tomorrow
- n. **Tn** Min temperature from 1300 LST to 1300 LST tomorrow
- o. **RHx** Max relative humidity from 1300 LST to 1300 LST tomorrow
- p. **RHn** Min relative humidity from 1300 LST to 1300 LST tomorrow
- q. **PD1** Precipitation duration in hours 1300 LST to 0500 LST
- r. **PD2** Precipitation duration in hours 0500 LST to 1300 LST
- s. **WETFLAG** Y or N. Indicates whether liquid water will be on the fuels at 13 LST. (Use with caution - a "Y" will set all the NFDRS indices to zero!)

3.3.5 Format. The NFDRS Forecast will follow the comma delimited format as shown:

**ZONE,NO,Yymmdd,13,WX,TEMP,RH,LAL1,LAL2,WSPD,10HR,TX,TN,RHx,
RHn,PD1,PD2,WETFLAG**

**FCST,NO,Yymmdd,13,WX,TEMP,RH,LAL1,LAL2,WDIR,WSPD,10HR,TX,TN,
RHx,RHn,PD1,PD2,WETFLAG**

An example of the point and zone products, formatted for transmission into AWIPS, are displayed below:

FNUS85 KBOI DDHHMM
FWMBOI

ZONE,403,011027,13,1,-3,0,1,1,0,0,,,,,0,0,N
ZONE,404,011027,13,0,3,0,1,1,0,0,,,,,0,0,N
ZONE,408,011027,13,0,4,-5,1,1,-3,0,89,68,75,22,0,0,N

FNUS82 KMWI DDHHMM
FWMJAX
FCST,083501,030219,13,1,69,43,1,1,SE,8,,72,46,100,40,0,0,N
FCST,081301,030219,13,1,67,42,1,1,SSE,5,,70,41,100,39,0,0,N

Follow the format precisely in order for the forecasts to be used as NFDRS input. Separate each element by a comma with no intervening spaces. (Some elements may not be forecast, but are represented by the null space between two consecutive commas.)

When the NWS NFDRS Forecast (FWM) is sent to the Weather Information Management System (WIMS), the product is automatically combined with information entered by land management personnel to provide the NFDRS fire index forecast. At roughly 1500 LST, the AWIPS product **NMCFWOXXX** should be available if the forecast values were accepted into the NFDRS system. The product will look similar to the observed values reported earlier, but the header should read: **Listing of Forecasted Observations**. If the page is blank, some formatting error prevented the forecast values from being accepted.

3.4 Updates and Corrections. Since the NFDRS system runs once a day, FWMs are not typically updated. The FWM will be corrected when a typographical/format error is detected.

4. Site-specific (Spot) Forecasts (Product Category FWS, WMO Header - FNUS7i).

4.1 Mission Connection. Site-specific (spot) forecasts are issued by WFOs in support of wildfire suppression and natural resource management. These forecasts aid the land management and fire control agencies in protecting life and property during wildland fires, hazardous fuels reduction, and rehabilitation and restoration of natural resources. Spot forecasts may also be issued for hazardous materials incidents and other threats to public safety.

4.2 Issuance Guidelines.

4.2.1 Creation Software. NWS Spot is the national standard for requesting and issuing spot forecasts and should be used when possible. In times when internet access is hindered or not

possible, spot forecasts may be requested and disseminated through another mutually-agreed-upon method. Reminder: If spot forecasts are issued outside of AWIPS (NWS Spot), then the originating WFO will retain a copy for 5 years (NWS Instruction 10-2003, Records Retention). WS Form D-1, Spot Request, is available in appendix B of this instruction for manual backup use.

4.2.2 Issuance Criteria. Site specific (spot) forecasts are non-routine products issued at the request of the user. WFOs will provide spot forecast service upon request of any federal, state, tribal, or local official who represents the spot forecast is required to support a wildfire.

For non-wildfire purposes, resources permitting, WFOs will provide spot forecast service under the following circumstances and conditions:

- a. Upon request of any federal official who represents that the spot forecast is required under the terms of the Interagency Agreement for Meteorological Services (NWS Instruction 10-406).
- b. Upon request of any state, tribal, or local official who represents that the spot forecast is required to carry out their wildland fire management responsibilities in coordination with any federal land management agency participating in the Interagency Agreement for Meteorological Services (NWS Instruction 10-406).
- c. Upon request of any public safety official who represents the spot forecast is essential to public safety, e.g. due to the proximity of population centers or critical infrastructure. A “public safety official” is an employee or contract agent of a government agency at any level (federal, state, local, tribal, etc.) charged with protecting the public from hazards including wildland fires of whatever origin and/or other hazards influenced by weather conditions such as hazardous material releases.

WFOs will not provide spot forecasts to private citizens or commercial entities not acting as an agent of a government agency.

MICs and fire weather program leaders should coordinate with local users and establish local policies/procedures for the site specific spot services in their fire weather services area. These policies/procedures should be clearly defined in the AOP.

At or before the time of a spot request, the requesting agency should provide information about the location, topography, fuel type(s), elevation(s), size, and ignition time, and a contact name(s) and telephone number(s) of the requestor (see section 4.2.2.1). Also, representative observation(s) at, or near, the site of the planned controlled burn, or wildfire, should be available to the responsible WFO prior to the issuance of the spot forecast(s). In the case of a wildfire, or a prolonged controlled burn, land management personnel should provide updated observations and information to NWS during the course of the event.

In some instances, wildfires or large or complex prescribed burns may pose a higher threat to life and/or property than a severe thunderstorm, flash flood, or tornado; hence, the issuance of spot forecasts should be prioritized in a manner similar to that of short-fuse warnings.

4.2.2.1 Requester Identification. The requester for each spot forecast must provide the following information before a spot forecast can be issued:

- a. Name;
- b. Government agency;
- c. Phone number, and
- d. Representation as to the reason for the spot forecast, which must be one of the reasons specified in section 4.2.2. above.

The NWS will accept the representation of the requester and will forward to the requester any questions regarding their representation. The spot forecast request form will contain the following warning regarding potential penalties for misrepresentation:

"NOTICE: Information provided on this form may be used by the National Weather Service for official purposes in any way, including public release and publication in NWS products. False statements on this form may be subject to prosecution under the False Statement Accountability Act of 1996 (18 U.S.C. § 1001) or other statutes."

All spot forecasts will be available for public use, including identification of the requester.

4.2.3 Issuance Time. Spot forecasts are non-routine and may be issued at any time upon user request.

4.2.4 Valid Time. The valid time will be determined at the time of the request. Most spots contain three periods, usually "today, tonight, and the next day", e.g., "FOR TODAY", "FOR TONIGHT", and "OUTLOOK FOR TOMORROW".

4.2.5 Product Expiration Time. None.

4.2.6 Event Expiration Time. None.

4.3 Technical Description.

4.3.1 UGC Type. None.

4.3.2 MND Broadcast Instruction Line. None.

4.3.3 MND Product Type Line. The FWS MND is "SPOT FORECAST FOR NAME_OF_INCIDENT", where "NAME_OF_INCIDENT" is replaced appropriately.

4.3.4 Content. The standard format for wildfire spot forecasts defines the required elements: headlines (when RFW in effect), discussion, sky/weather, temperature, relative humidity, and wind. Optional elements (transport winds, mixing depth, LAL, Haines index, chance of wetting rain, etc.) should be defined by the requesters or by agreement with the land management agencies in the AOP.

The content for non-wildfire spot forecasts (e.g., controlled burns, HAZMAT incidents, etc.) is determined by the requester. These spot forecasts may contain any of the above required or optional elements plus any other agreed upon parameters. The period or number of periods in the spot should be defined by the user upon request of the spot forecast.

Forecasters should be aware of the critical weather element thresholds for the spot forecast area. These thresholds are often determined by a fire behavior analyst or other fuels/fire behavior expert and define ranges of wind, relative humidity, etc. that, if realized, may cause significant increase (or decrease) in fire behavior. In most cases, such information can be obtained directly from the on-site requester. In the case of prescribed burns, these thresholds are often defined in the "Burn Plan", which is normally developed and approved well before a spot forecast is requested.

Since spot forecasts cover a small geographical area, areal weather descriptors (such as scattered showers, isolated showers, etc.) should be used with discretion. The timing of significant events is important and, in the case of wind shifts, extremely critical. Wind forecasts should clearly indicate the level of the wind forecast (usually 20-ft level).

4.3.5 Format.

4.3.5.1 Format for Wildfire Spot Forecasts. Forecasters will use the national standard for spot forecasts for wildfires as shown below in Exhibit 4-1. This standard ensures that fire suppression personnel brought in from another area of the country will be proficient in the interpretation of any spot forecast issued for wildfires.

Exhibit (4-1) - Standardized Spot Forecast for Wildfires (also for HAZMAT and Search and Rescue)

FNUS7i KXXX DDHHMM
FWSXXX

SPOT FORECAST FOR (location or name of burn)

NATIONAL WEATHER SERVICE (CITY STATE)
TIME-DATE (800 AM MST TUE NOV 27 2001)

IF CONDITIONS BECOME UNREPRESENTATIVE...CONTACT THE NATIONAL WEATHER SERVICE.

...HEADLINE...(if a fire weather watch or red flag warning is in effect, a headline is required - otherwise, a headline is recommended for every issuance.)

DISCUSSION...(required)

FIRST PERIOD

SKY/WEATHER.....
TEMPERATURE.....
HUMIDITY.....
WIND.....(specify the wind level)
OPTIONAL ELEMENTS...(as requested by the users)

SECOND PERIOD

SKY/WEATHER.....
TEMPERATURE.....

```

HUMIDITY.....
WIND.....(specify the wind level)
OPTIONAL ELEMENTS...(as requested by the users)

THIRD PERIOD
SKY/WEATHER.....
TEMPERATURE.....
HUMIDITY.....
WIND.....(specify the wind level)
OPTIONAL ELEMENTS...(as requested by the users)

FORECASTER...(optional)

$$

REQUESTING OFFICIAL...(name of requester)
REASON FOR REQUEST...(reason for request)

```

4.3.5.2 Format for Non-Wildfire Spot Forecasts. Though the content and number of forecast periods may be different, the format for non-wildfire spot forecasts should conform to the standard format for wildfire spot forecasts (as in section 4.3.5.1 above). Other formats should be approved by the appropriate Regional Headquarters and coordinated with the users in the AOP.

4.4 Updates and Corrections. Site-specific forecasts are considered one-time requests, and are not routinely monitored or updated. Spot forecasts may be updated when representative observations are available to the forecaster, he/she deems the current forecast does not adequately represent current or expected weather conditions, and emergency contact information is available to disseminate the update. Land management personnel may contact the appropriate WFO for a spot update if forecast conditions appear unrepresentative of the actual weather conditions.

The FWS will be corrected when a typographical/format error is detected. Corrections should be delivered to users in the same manner as the original FWS when possible.

5 Fire Weather Watch/Red Flag Warning (Product Category RFW, WMO Header - WWUS8i).

5.1 Mission Connection. Forecasters will issue Fire Weather Watches/Red Flag Warnings when the combination of dry fuels and weather conditions support extreme fire danger and/or fire behavior. These conditions alert land management agencies to the potential for widespread new ignitions or control problems with existing fires, both of which could pose a threat to life and property.

5.2 Issuance Guidelines.

5.2.1 Creation Software. WFOs should use AWIPS Watch/Warning/Advisory (WWA) or other NWS-approved software to issue the RFW.

The dissemination of the RFW should reflect local user capabilities to provide the most efficient means of getting watches/warnings to the appropriate fire suppression personnel. Fire Weather Watch/Red Flag Warning dissemination methods will be detailed in the AOP.

5.2.2 Issuance Criteria. Red Flag Event criteria are determined by coordination between WFO personnel and land management customers in the WFO fire weather service area. Each WFO should have their specific criteria well-marked in the AOP and Station Duty Manual (SDM).

Red Flag Event criteria consists of both fuel and weather parameters. WFO fire weather program leaders should monitor NFDRS or other suitable fire danger indices, coordinate with land management personnel to keep abreast of the fuel conditions, and make sure this information is available to WFO forecasters. Suggested meteorological criteria for a Red Flag Event include:

- a. Lightning after an extended dry period
- b. Significant dry frontal passage
- c. Strong winds
- d. Very low relative humidity
- e. Dry thunderstorms

Forecasters should coordinate with local fire and land managers prior to the issuance of a Fire Weather Watch or Red Flag Warning.

5.2.2.1 Fire Weather Watch. Forecasters should issue a Fire Weather Watch when there is a high potential for the development of a Red Flag Event. A Watch will only be issued (or continued) in the first 12-hour time period for dry thunderstorm events. For other events, the watch will be issued 12 to 72 hours in advance of the expected onset of criteria. The watch may be issued for all, or selected portions within a fire weather zone or region.

A Fire Weather Watch should not be issued, or continued, to indicate low confidence or borderline conditions. In these situations, the forecaster should describe the expected conditions and reasons for uncertainty in the discussion portion of the routine Fire Weather Planning Forecast.

5.2.2.2 Red Flag Warning. A Red Flag Warning is used to warn of an impending, or occurring Red Flag Event. Its issuance denotes a high degree of confidence that weather and fuel conditions consistent with local Red Flag Event criteria will occur in 24 hours or less. Forecasters can issue the warning for all or selected portions within a fire weather zone.

5.2.3 Issuance Time. Fire Weather Watches/Red Flag Warnings are issued on an event-driven basis when agreed upon criteria are met.

5.2.4 Valid Time. A Fire Weather Watch or Red Flag Warning is valid from the time critical fire weather conditions are expected to commence (event start time) until the time when the same conditions are expected to end (event expiration time). When the event start time precedes the issuance of the Red Flag Warning, the beginning of the Valid Time period is simply the issuance time.

For Red Flag Warnings, the event expiration time should generally not exceed 36 hours from issuance. For Fire Weather Watches, the event expiration time should be in the 24 to 72 hour time frame.

Valid time information is included in both headlines and P-VTEC coding.

5.2.5 Product Expiration Time. The UGC product expiration time should be approximately 12 or 24 hours to coincide with the next issuance of the Fire Weather Planning Forecast. This expiration time can vary, but any significant variance should be noted and agreed upon in the AOP.

5.3 Technical Description.

5.3.1 UGC Type and Valid Time Event Coding (P-VTEC). RFWs will use fire weather zone numbers and the zone (Z) form of the UGC coding. Where defined as such by the WFO, fire weather zone numbers may be the same as public zone numbers. UGC coding line will be followed by a P-VTEC line using policy in NWSI 10-1703 (Valid Time Event Code). The P-VTEC line will contain information on the type of product (Red Flag Warning or Fire Weather Watch), the action (new issuance, expansion of area, continuance, extension in time, cancellation), issuing office, and event start and expiration times.

Note: The VTEC information in the RFW product format and examples will be operationally implemented at all WFOs in the Fall of 2005.

5.3.2 MND Broadcast Instruction Line. None.

5.3.3 MND Product Type Line. The RFW MND is "FIRE WEATHER WATCH" or "RED FLAG WARNING". In a multi-segmented product where both Red Flag Warning and Fire Weather Watch information are both included, the MND will display "RED FLAG WARNING".

5.3.4 Content. The Fire Weather Watch and Red Flag Warning format will include segmented forecast information, and may contain an overview section. The format is shown below in exhibit 5-1.

5.3.4.1 Overview Section. This section is optional. If included, it should contain at least one of the following items:

- a. Overview Headline(s) - general headline statement(s) that summarizes the Fire Weather threat, time of development, reason for issuance, and area affected.

Example:

...RED FLAG WARNING FROM 2PM TO 7PM MST FOR STRONG WINDS
AND LOW HUMIDITY FOR SOUTHEAST OREGON...

- b. General Discussion - a brief, non-technical discussion of the expected fire

weather event.

5.3.4.2 Segmented Forecast Information. Each segment of the Fire Weather Watch/Red Flag Warning will include:

- a. UCG coding, Valid Time Event Coding (P-VTEC), and geographic description of zones and/or zone numbers.
- b. A headline describing the state of the FIRE WEATHER WATCH or RED FLAG WARNING (issued, continues, canceled), the effective time of the event, the critical weather element(s) causing the event, and a description of the affected area.
- c. Discussion section which describes the adverse weather conditions. In the initial issuance of the watch or warning, include the following phrase to begin the discussion:

THE NATIONAL WEATHER SERVICE IN [WFO or location] HAS ISSUED A [RED FLAG WARNING or FIRE WEATHER WATCH] FOR

This attribution line is optional for subsequent issuances.

5.3.4.3 Order of Segments. The order of segments is:

- (1) Cancellation
- (2) Warnings
- (3) Watches

5.3.4.4 Order of Headlines. If multiple headlines are required in a single segment, the order of headlines will follow the order of segments.

Example: "Red Flag Warning canceled; Fire Weather Watch continues for same geographic area."

...RED FLAG WARNING IS CANCELED FOR DRY LIGHTNING ACROSS THE BURNS BLM...

...FIRE WEATHER WATCH REMAINS IN EFFECT FOR THURSDAY FOR DRY LIGHTNING ACROSS SOUTHEAST OREGON...

5.3.5 Format. Exhibit (5-1) - Format of a FIRE WEATHER WATCH MESSAGE (RFW):

WWUS8i KNNN DDHHMM
RFWNNN

FIRE WEATHER WATCH
NATIONAL WEATHER SERVICE CITY STATE
TIME-DATE (example: 830 MDT WED SEP 1 2004)

...OVERVIEW HEADLINE/S (optional)...

.(optional overview discussion, focus on adverse weather conditions)
SSZXXX-XXX>XXX-DDHHMM- (UGC coding)
/<P-VTEC CODING>
GEOGRAPHICAL DESCRIPTORS (including land management governing units, fire
weather zone numbers, and/or county names)
TIME-DATE (example: 0830 MDT WED SEP 1, 2004)

...SEGMENT HEADLINE (of what, when, why, and where)...

Discussion/details...

\$\$

[next segment if necessary]

\$\$

Note: Red Flag Warning would follow the same format above except MND would state “RED FLAG WARNING” instead of “FIRE WEATHER WATCH”.

5.4 Updates and Corrections. A Fire Weather Watch will remain in effect until the watch: 1) is canceled, 2) is upgraded to a Red Flag Warning, or 3) expires.

A Red Flag Warning will remain in effect until the warning: 1) is canceled, or 2) expires.

Use the same product identifier (RFW) for issuing, updating, and canceling Fire Weather Watches and Red Flag Warnings. Forecasters will also update the FWF product when a RFW product is issued, updated, or cancelled.

The RFW will be corrected when a typographical/format error is detected.

5.5 Other Dissemination of Red Flag Information. Forecasters will place headlines for Fire Weather Watches/Red Flag Warnings at the beginning of the routine Fire Weather Planning Forecast (FWF) and in the appropriate zone sections (see 2.3.4a for details).

Forecasters should include the RFW highlights in the appropriate list of highlights in the Area Forecast Discussion. Dissemination of RFW information on NOAA Weather Radio is left to local or regional policy.

6 Land Management Forecast (Product Category FWL, WMO Header - FNUS8i). The Land Management Forecast product is a general-purpose, miscellaneous-type product with content, format, issuance, etc. determined per locally established requirements.

7 Smoke Management Forecast (Product Category SMF, WMO Header - FNUS7i). WFO staff issue smoke management forecasts at the request of land management agencies. The SMF may be issued on a routine basis, or issued as needed, and may be narrative, or tabular in format, or a combination of both. Forecasters may include the smoke management forecast as part of another weather product (for instance, the FWF) or as a separate product. The requester and the responsible NWS office should establish the content, format, frequency of issuance, dissemination method, etc.. This product may contain forecasts of the transport winds and the

variability of transport winds with height and time, air mass stability, air dispersion and measures of dispersion, mixing depths and variations with time as well as other smoke management related parameters.

8 Rangeland/Grassland Fire Danger Statement (Product Category RFD, WMO Header - FNUS6i). A Rangeland, or Grassland Fire Danger Statement product is a miscellaneous product which provides advisory information on rangeland and/or grassland fire potential or conditions. Land management and NWS personnel should establish the contents, format, frequency of issuance, dissemination, etc.. This product may be issued on a routine or non-routine basis.

9 Storm Prediction Center (SPC) Fire Weather Outlook (Product Category FWD, WMO Header - FNUS21 and FNUS22).

9.1 Mission Connection. The SPC Day One and Day Two Fire Weather Outlooks (narrative and graphical) describe large-scale meteorological conditions in the lower 48 states which, when combined with the antecedent fuel conditions, favor the rapid growth and spread of a fire, should a fire ignition occur. These outlooks provide guidance for WFO forecasters and aid land management agencies in determining large-scale areas of fire danger risk.

9.2 Issuance Guidelines.

9.2.1 Creation Software. NAWIPS, PC and Web based.

9.2.2 Issuance Criteria. The Day One and Day Two Fire Weather Outlooks are scheduled products and are issued once per day.

9.2.3 Issuance Time. The outlooks are issued at 4:00 AM CST and 5:00 AM CDT.

9.2.4 Valid Time. The outlook period for each Day One and Day Two outlook will extend from 12 to 12 UTC.

9.2.5 Product Expiration Time. At 1200 UTC tomorrow (Day One) and at 1200 UTC the next day (Day Two)

9.2.6 Event Expiration Time. None.

9.3 Technical Description. Outlooks should follow the format and content described in this section.

9.3.1 UGC Type. None.

9.3.2 MND Broadcast Instruction Line. None.

9.3.3 MND Product Type Line. Day (One, or Two) Fire Weather Outlook.

9.3.4 Content. The outlooks (text and graphic) will highlight:

- a. Significant Dry Thunderstorm Critical Fire Weather Areas (areas of numerous cloud-to-ground lightning strikes with generally less than one-tenth inch of rain across the area, a closed scalloped area on graphic)
- b. Critical Fire Weather areas (based on fuel conditions and forecast weather, designated as a closed area on graphic)
- c. Extremely Critical Fire Weather areas (issued infrequently for only the most severe forecast and fuel conditions, designated as a closed, hatched area on graphic)
- d. "See Text" defines the case where an area is being considered for a possible critical fire weather outlook, but there is uncertainty or the expected weather conditions will be just below the criteria for a critical area. In addition, a forecaster can also use "...AREA..." notation to describe areas that have had fire weather problems and/or have more than one limiting factor.

The Day 1 and Day 2 text and graphics should be similar. Areas that are a marginal threat (lacking one critical element) should be depicted by SEE TEXT on the graphic and discussed last in the text message.

9.3.5 Format. The text outlooks should follow the format specified in exhibit 9-1. The products are provided via AWIPS and the Web and can be viewed on the Web at <http://www.spc.noaa.gov/fire>. The text format will include:

- a. Headlines that highlight all critical fire weather areas
- b. Synopsis of large-scale conditions affecting fire weather conditions across the lower 48 states
- c. Individual fire weather areas with primary conditions affecting the area and a brief discussion of the forecast fire weather conditions
- d. Other areas forecast to have marginal fire weather conditions but need to be monitored

Exhibit (9-1) - Format example of text version of SPC Fire Weather Outlook Product.

```
FNUS21 KWNS ddhhmm
FWDDY1
```

```
DAY 1 FIRE WEATHER OUTLOOK
NWS STORM PREDICTION CENTER NORMAN OK
Time am time_zone day mon dd yyyy
```

```
VALID DDHHMMZ - DDHHMMZ
```

```
...EXTREMELY CRITICAL FIRE WEATHER AREA FOR AREA OF CONCERN #1...
...CRITICAL FIRE WEATHER AREA FOR AREA OF CONCERN #2... (other areas as
needed)
```

```
...SYNOPSIS...
(TEXT)
```

```
...EXTREMELY CRITICAL FIRE WEATHER AREA #1...
AREAS OF HIGHEST RISK ARE DISCUSSED FIRST
```

PRIMARY CONDITIONS:
NARRATIVE TECHNICAL DISCUSSION

...CRITICAL FIRE WEATHER AREA #2...

PRIMARY CONDITIONS:
NARRATIVE TECHNICAL DISCUSSION

..FORECASTER.. MM/DD/YYYY

...PLEASE SEE WWW.SPC.NOAA.GOV/FIRE FOR GRAPHIC PRODUCT...

9.4 Updates and Corrections. Outlooks are not updated or amended. Corrections are sent on as needed basis.

9.5 AWIPS IDs. The AWIPS Graphic IDs are:

		WMO
Day 1	RBGFW1	PMWE98 KWNS for Day 1 (valid 12 UTC today-12 UTC tomorrow)
Day 2	RBGFW2	PMWI98 KWNS for Day 2 (valid 12 UTC tomorrow-12 UTC the day after)

The AWIPS Text IDS are:

		WMO
Day 1	FWDDY1	FNUS21 KWNS for Day 1 (valid 12 UTC today-12 UTC tomorrow)
Day 2	FWDDY2	FNUS22 KWNS for Day 2 (valid 12 UTC tomorrow-12 UTC the day after)

Appendices

APPENDIX A - Product Examples

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1. Fire Weather Planning Forecast Product (FWF).

1.1 Narrative Format.

FNUS55 KBOI DDHMM
FWFBOI

FIRE WEATHER PLANNING FORECAST FOR SW IDAHO AND SE OREGON
NATIONAL WEATHER SERVICE BOISE ID
930 AM MDT SAT JUL 14 2001

...SHOWERS AND THUNDERSTORMS TODAY AND SUNDAY...MAINLY AFTERNOON/EVENINGS...
...COOLER WITH SHOWERS MONDAY THROUGH WEDNESDAY...

.DISCUSSION...MOIST AND UNSTABLE SOUTHWESTERLY FLOW ALONG WITH WEAK
DISTURBANCES WILL CONTINUE TO TRIGGER MAINLY AFTERNOON AND EVENING
THUNDERSTORMS THROUGH SUNDAY. A LOW PRESSURE AREA IN THE GULF OF ALASKA WILL
ENTER THE PACIFIC NORTHWEST SUNDAY EVENING BRINGING COOLER CONDITIONS ALONG
WITH SHOWERS MONDAY THROUGH WEDNESDAY.

IDZ401>404-142200-
WEST CENTRAL IDAHO MOUNTAINS...INCLUDES PAYETTE NF AND BOISE NF
930 AM MDT SAT JUL 14 2001

.TODAY...
SKY/WEATHER.....PARTLY CLOUDY. A CHANCE OF AFTERNOON SHOWERS AND
THUNDERSTORMS.
MAX TEMPERATURE.....80 TO NEAR 90.
24 HR TREND.....LITTLE CHANGE.
MIN HUMIDITY.....15-20 PCT.
24 HR TREND.....NO CHANGE.
WIND (20 FT).....

NWSI 10-401 APRIL 19, 2005

VALLEYS.....LIGHT MORNING WINDS THEN UPSLOPE 4-8 MPH IN THE AFTERNOON.
RIDGES.....WEST-SOUTHWEST 5-10 MPH.
HAINES INDEX.....3 VERY LOW.
LAL.....3.
MIXING HEIGHT.....7000 FT AGL.
TRANSPORT WIND.....NORTHWEST AROUND 5 MPH.

.TONIGHT...
SKY/WEATHER.....MOSTLY CLOUDY WITH A CHANCE OF EVENING SHOWERS AND
THUNDERSTORMS.
MIN TEMPERATURE.....45-55.
24 HR TREND.....LITTLE CHANGE.
MAX HUMIDITY.....65-70 PCT. MODERATE-GOOD RECOVERY.
24 HR TREND.....DOWN 5 PCT.
WIND (20 FT).....
VALLEYS.....DOWNSLOPE 3-7 MPH AFTER SUNSET.
RIDGES.....SOUTH TO SOUTHWEST 5-10 MPH.
HAINES INDEX.....3 VERY LOW.
LAL.....3.
MIXING HEIGHT.....LOWERING TO 1000 FT AGL.
TRANSPORT WIND.....NORTHWEST 5 TO 10 MPH.

.SUNDAY...
SKY/WEATHER.....MOSTLY CLOUDY AND COOLER WITH A CHANCE OF SHOWERS.
MAX TEMPERATURE.....75-85.
MIN HUMIDITY.....28-33 PCT.
WIND (20 FT).....
VALLEYS.....LIGHT MORNING WINDS THEN SOUTHWEST 10-15 MPH IN THE
AFTERNOON.
RIDGES.....SOUTHWEST 10 TO 15 MPH.
HAINES INDEX.....3 VERY LOW.
LAL.....1.
MIXING HEIGHT.....6000 FT AGL.
TRANSPORT WIND.....NORTHWEST 5 TO 10 MPH.

\$\$

[forecast for next geographical descriptor and fire weather zone group]

\$\$

.FORECAST DAYS 3 THROUGH 7...
.MONDAY THROUGH WEDNESDAY...COOLER WITH SHOWERS. LOWS IN THE 40S TO NEAR 50.
HIGHS IN THE 70S TO NEAR 80. AFTERNOON NORTHWEST WINDS 10 TO 20 MPH.
.THURSDAY AND FRIDAY...PARTLY CLOUDY AND WARMER. LOWS NEAR 50. HIGHS IN THE
80S.

.OUTLOOK FOR SATURDAY JULY 21 2001 THROUGH FRIDAY JULY 27 2001...TEMPERATURES
AND PRECIPITATION ARE EXPECTED TO REMAIN NEAR NORMAL THROUGH THE PERIOD.

\$\$

NAME (OPTIONAL)

1.2 Tabular Format.

FNUS52 KTBW 051200
FWFTBW

FIRE WEATHER PLANNING FORECAST FOR WEST CENTRAL AND SOUTHWEST FLORIDA

NATIONAL WEATHER SERVICE TAMPA BAY AREA RUSKIN FL
730 AM EST TUE FEB 5 2002

...LOW HUMIDITY AGAIN THIS AFTERNOON BUT RELIEF IN SIGHT...

.DISCUSSION...NORTHEAST TO EAST WINDS WILL ALLOW MINIMUM HUMIDITY TO DROP TO AROUND 30 PERCENT BY MID-AFTERNOON. THE DRY INTERVAL SHOULD BE SHORT-LIVED AS A STORM SYSTEM DEVELOPS OVER THE NORTHERN GULF AND WESTERN FLORIDA PANHANDLE WEDNESDAY...DELIVERING WARMER TEMPERATURES BUT ALSO HIGHER HUMIDITY ON A MORE SOUTHEAST FLOW. WEAK SHOWER CHANCES WILL RETURN OVER THE NORTH NEAR A DEVELOPING WARM FRONT AS WELL AS OVER THE INTERIOR PORTIONS OF THE CENTRAL AND SOUTH WEDNESDAY THROUGH FRIDAY. THE WARM FRONT WILL MOVE NORTH OF THE REGION...ALLOWING DRY AND WARMER WEATHER TO RETURN FOR THE WEEKEND.

FLZ042-043-048-052030-
CITRUS-HERNANDO-SUMTER-
730 AM EST TUE FEB 05 2002

PARAMETER	TODAY	TONIGHT	WEDNESDAY
CLOUD COVER	PCLDY	MCLDY	MCLDY
CHANCE PRECIP (%)	NONE	NONE	20
PRECIP TYPE	NONE	NONE	RAIN
TEMP (24H TREND)	64 (-2)	49 (-3)	72
RH % (24H TREND)	30	85	46
20FT WND MPH	E 11	E 6	SE 9
PRECIP DURATION	NONE	NONE	1
PRECIP BEGIN	NONE	NONE	4 PM
PRECIP END	NONE	NONE	CONTINUING
PRECIP AMOUNT	NONE	NONE	0.25
MIXING HGT (MSL)	2400	700	3100
TRANSPORT WIND(KTS)	E 15	E 8	SE 10

REMARKS...NONE.

\$\$

[forecast for next geographical descriptor and fire weather zone group]

\$\$

.FORECAST FOR DAYS 3 THROUGH 7...

.THURSDAY AND FRIDAY...CLOUDY AND COOLER WITH SCATTERED SHOWERS. LOWS 45 TO 50. HIGHS IN THE MID 60S. WINDS BECOMING NORTH 15 TO 25 MPH THURSDAY AFTERNOON.

.SATURDAY THROUGH MONDAY...PARTLY CLOUDY AND WARMER. LOWS IN THE 50S. HIGHS IN THE 70S TO NEAR 80. WINDS GENERALLY BELOW 15 MPH.

\$\$

2. National Fire Danger Rating System Product (FWM).

FNUS85 KBOI DDHHMM
FWMBOI

ZONE,403,011027,13,1,-3,0,1,1,0,0,,,,,0,0,N
ZONE,404,011027,13,0,3,0,1,1,0,0,,,,,0,0,N
ZONE,408,011027,13,0,4,-5,1,1,-3,0,,,,,0,0,N

FNUS82 KMWI DDHHMM
FWMJAX

FCST,083501,030219,13,1,69,43,1,1,SE,8,,72,46,100,40,0,0,N
FCST,081301,030219,13,1,67,42,1,1,SSE,5,,70,41,100,39,0,0,N

3. Spot Forecasts for a Wildfire (FWS).

FNUS75 KBOI DDHHMM
FWSBOI

SPOT FORECAST FOR THE ROUGH DIAMOND FIRE...BOISE DISPATCH
NATIONAL WEATHER SERVICE BOISE ID
113 PM MDT MON AUG 27 2001

IF CONDITIONS BECOME UNREPRESENTATIVE, CONTACT THE NATIONAL WEATHER SERVICE.

...HOT AND DRY WITH AFTERNOON HUMIDITY BELOW 10 PCT...

DISCUSSION...UPPER RIDGE WILL KEEP CONDITIONS AT THE FIRE SITE HOT AND DRY AGAIN TODAY. WINDS WILL GENERALLY BE WEST TO NORTH...BUT SOME ERRATIC EDDIES MAY OCCUR IN THE LOWEST VALLEY BOTTOMS WHERE UPSLOPE WINDS WILL CONFLICT WITH THE FLOW ALOFT. AFTERNOON HUMIDITY WILL BE VERY LOW...DROPPING BELOW 10 PERCENT.

FOR TODAY

SKY/WEATHER.....SUNNY AND CONTINUED HOT.
TEMPERATURE.....HIGH 92-95.
HUMIDITY.....MIN 7-9 PCT.
20 FOOT WIND.....NORTH 5-10 MPH WITH GUSTS TO 15 MPH IN VALLEYS.
 RIDGETOP AND UPPER SLOPE: WINDS NORTHWEST TO NORTH
 10-15 MPH WITH GUSTS TO 20 MPH POSSIBLE. ERRATIC
 EDDIES POSSIBLE IN VALLEY BOTTOMS.
HAINES INDEX.....5 MODERATE.

FOR TONIGHT

SKY/WEATHER.....CLEAR.
TEMPERATURE.....LOW 50-55.
HUMIDITY.....MAX NEAR 30 PCT.
20 FOOT WIND.....VALLEYS: DOWNSLOPE 5-10 MPH. RIDGETOP/UPPER SLOPES:
 NORTHWEST TO 10 MPH AFTER EVENING GUSTS TO 20 MPH.
HAINES INDEX.....4 LOW.

OUTLOOK FOR TOMORROW

SKY/WEATHER.....SUNNY AND A LITTLE COOLER.
TEMPERATURE.....HIGH 86-89.
HUMIDITY.....MIN 11-13 PCT.
20 FOOT WIND.....VALLEYS: NORTH 7-13 MPH. RIDGETOP/UPPER SLOPES:
 NORTHWEST 10-20 MPH WITH AFTERNOON GUSTS TO 25 MPH.
HAINES INDEX.....4 LOW.

FORECASTER...(optional)

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REQUESTING OFFICIAL...JOHN DOE
REASON FOR REQUEST...WILDFIRE

4. Fire Weather Watch/Red Flag Warning (RFW).

4.1 Single Segment RFW. (Red Flag Warning is similar except product headlined "RED FLAG WARNING").

WWUS85 KBOI 012130
RFWBOI

FIRE WEATHER WATCH
NATIONAL WEATHER SERVICE BOISE ID

330 PM MDT WED SEP 1 2004

ORZ636-637-021800-
/O.NEW.KBOI.FW.A.0005.040902T1800Z-040903T0100Z/
SOUTHEAST OREGON INCLUDES BURNS BLM-
SOUTHEAST OREGON INCLUDES VALE BLM-
330 PM MDT WED SEP 1 2004

...FIRE WEATHER WATCH THURSDAY AFTERNOON FOR STRONG SOUTHWEST WINDS AND LOW HUMIDITY FOR SOUTHEAST OREGON...

THE NATIONAL WEATHER SERVICE IN BOISE HAS ISSUED A FIRE WEATHER WATCH FOR STRONG SOUTHWEST WINDS AND LOW HUMIDITY THURSDAY AFTERNOON FOR SOUTHEAST OREGON INCLUDING THE BURNS AND VALE BLM DISTRICTS. A STRONG COLD FRONT WILL BE APPROACHING THE STATE LATE THURSDAY. VERY LOW HUMIDITY AHEAD OF THE FRONT AND STRONG WINDS ACCOMPANYING THE FRONT COULD REACH RED FLAG CRITERIA.

PLEASE ADVISE THE APPROPRIATE OFFICIALS OR FIRE CREWS IN THE FIELD OF THIS FIRE WEATHER WATCH.

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4.2 Multiple Segment RFW

WWUS85 KBOI 021630
RFWBOI

RED FLAG WARNING
NATIONAL WEATHER SERVICE BOISE ID
1030 AM MDT WED SEP 2 2004

ORZ636-637-030000-
/O.CON.KBOI.FW.W.0008.000000T0000Z-040903T0100Z/
SOUTHEAST OREGON INCLUDES BURNS BLM-
SOUTHEAST OREGON INCLUDES VALE BLM-
1030 AM MDT WED SEP 2 2004

...RED FLAG WARNING REMAINS IN EFFECT THROUGH 8PM MDT ACROSS SOUTHEAST OREGON FOR STRONG WINDS AND LOW HUMIDITY...

A RED FLAG WARNING CONTINUES FOR STRONG SOUTHWEST WINDS AND LOW HUMIDITY THROUGH THIS EVENING FOR SOUTHEAST OREGON INCLUDING THE BURNS AND VALE BLM DISTRICTS. A STRONG COLD FRONT WILL MOVE ACROSS THE AREA THIS AFTERNOON AND EVENING. HUMIDITY AHEAD OF THE FRONT WILL DROP TO BELOW 10 PERCENT BY EARLY AFTERNOON AND COMBINE WITH SOUTHWEST WINDS BLOWING 20 TO 25 MPH PRODUCING RED FLAG CONDITIONS. STRONG WINDS BRIEFLY REACHING 30 MPH WILL ALSO ACCOMPANY THE FRONTAL PASSAGE.

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IDZ408-030000-
/O.NEW.KBOI.FW.A.0006.040904T2100Z-040905T0000Z/
SOUTHWEST IDAHO INCLUDES LOWER SNAKE RIVER BLM-
1030 AM MDT WED SEP 2 2004

...FIRE WEATHER WATCH IN EFFECT FRIDAY AFTERNOON FOR SOUTHWEST IDAHO FOR LOW HUMIDITY AND WEST WINDS...

THE NATIONAL WEATHER SERVICE IN BOISE HAS ISSUED A FIRE WEATHER WATCH FOR FRIDAY AFTERNOON FOR SOUTHWEST IDAHO INCLUDING THE LOWER SNAKE RIVER BLM DISTRICT. THOUGH FRIDAY WILL BE A BIT COOLER...WEST WINDS WILL PICK UP AGAIN IN THE 15 TO 25 MPH RANGE AND HUMIDITY MAY BE LOW ENOUGH TO PRODUCE CRITICAL FIRE BEHAVIOR BY FRIDAY AFTERNOON.

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4.3 Multiple Segment RFW with Overview Section

WWUS85 KBOI 021630
RFBWBOI

RED FLAG WARNING
NATIONAL WEATHER SERVICE BOISE ID
1030 AM MDT WED SEP 2 2004

...RED FLAG WARNING THROUGH 8PM MDT FOR SOUTHEAST OREGON FOR STRONG WINDS AND LOW HUMIDITY...
...FIRE WEATHER WATCH FRIDAY AFTERNOON ACROSS SOUTHWEST IDAHO FOR STRONG WINDS AND LOW HUMIDITY...

.A STRONG COLD FRONT WILL MOVE ACROSS SOUTHEAST OREGON THIS AFTERNOON AND EVENING BRINGING GUSTY WINDS AND LOW RELATIVE HUMIDITY. THE MOST CRITICAL FIRE WEATHER CONDITIONS WILL OCCUR AHEAD OF AND JUST ALONG THE FRONT. BY THURSDAY AFTERNOON...THE FRONT WILL HAVE MOVED INTO SOUTHEAST IDAHO. THOUGH TEMPERATURES WILL BE A BIT COOLER...WINDS AND HUMIDITY MAY BE CLOSE TO CRITICAL VALUES ACROSS SOUTHWEST IDAHO THURSDAY AFTERNOON.

ORZ636-637-030000-
/O.CON.KBOI.FW.W.0008.000000T0000Z-040903T0100Z/
SOUTHEAST OREGON INCLUDES BURNS BLM-
SOUTHEAST OREGON INCLUDES VALE BLM-
1030 AM MDT WED SEP 2 2004

...RED FLAG WARNING REMAINS IN EFFECT THROUGH 8PM MDT FOR STRONG WINDS AND LOW HUMIDITY FOR SOUTHEAST OREGON...

A RED FLAG WARNING CONTINUES FOR STRONG SOUTHWEST WINDS AND LOW HUMIDITY THROUGH THIS EVENING FOR SOUTHEAST OREGON INCLUDING THE BURNS AND VALE BLM DISTRICTS. A STRONG COLD FRONT WILL MOVE ACROSS THE AREA THIS AFTERNOON AND EVENING. HUMIDITY AHEAD OF THE FRONT WILL DROP TO BELOW 10 PERCENT BY EARLY AFTERNOON AND COMBINE WITH SOUTHWEST WINDS BLOWING 20 TO 25 MPH PRODUCING RED FLAG CONDITIONS. STRONG WINDS BRIEFLY REACHING 30 MPH WILL ALSO ACCOMPANY THE FRONTAL PASSAGE.

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IDZ408-030000-
/O.NEW.KBOI.FW.A.0006.040904T2100Z-040905T0000Z/
SOUTHWEST IDAHO INCLUDES LOWER SNAKE RIVER BLM-
1030 AM MDT WED SEP 2 2004

...FIRE WEATHER WATCH IN EFFECT FRIDAY AFTERNOON FOR SOUTHWEST IDAHO FOR LOW HUMIDITY AND WEST WINDS...

THE NATIONAL WEATHER SERVICE IN BOISE HAS ISSUED A FIRE WEATHER WATCH FOR FRIDAY AFTERNOON FOR SOUTHWEST IDAHO INCLUDING THE LOWER SNAKE RIVER BLM DISTRICT. THOUGH FRIDAY WILL BE A BIT COOLER...WEST WINDS WILL PICK UP AGAIN IN THE 15 TO 25 MPH RANGE AND HUMIDITY MAY BE LOW ENOUGH TO PRODUCE CRITICAL FIRE BEHAVIOR BY FRIDAY AFTERNOON.

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Appendix B – Spot Forecast Request Form D-1

This form is used as manual backup to the NWS Spot system. The complete form is found on the next page. If problems are encountered printing this form, contact the NFWOC.

WS FORM D-1 (1-2005) (Supersedes Previous Editions)		SPOT REQUEST (See reverse for instructions)		U.S. Department of Commerce NOAA National Weather Service									
Please call the NWS Weather Forecast Office (WFO) when submitting a request and also after you receive a forecast to ensure request and forecast were received. Please provide feedback to WFO on forecast.													
1. Time†		2. Date		3. Name of Incident or Project		4. Requesting Agency							
5. Requesting Official		6. Phone Number		7. Fax Number		8. Contact Person							
9. Ignition/Incident Time and Date		12. Reason for Spot Request (choose one only) <ul style="list-style-type: none">WildfireNon-Wildfire Under the Interagency Agreement for Meteorological Services (USFS, BLM, NPS, USFWS, BIA)Non-Wildfire State, tribal or local fire agency working in coordination with a federal participant in the Interagency Agreement for Meteorological ServicesNon-Wildfire Essential to public safety, e.g. due to the proximity of population centers or critical infrastructure.		13. Latitude/Longitude:									
10. Size (Acres)				14. Elevation (ft, Mean Sea Level) Top: Bottom:									
11. Type of Incident <ul style="list-style-type: none">WildfirePrescribed FireWildland Fire Use (WFU)HAZMATSearch And Rescue (SAR)				15. Drainage									
				16. Aspect		17. Sheltering <ul style="list-style-type: none">FullPartialUnsheltered							
18. Fuel Type: Grass Brush Timber Slash Grass/Timber Understory Other Fuel Model: 1,2,3 4,5,6,7 8,9,10 11,12,13 2,5,8													
19. Location and name of nearest weather observing station (distance & direction from project):													
20. Weather Observations from project or nearby station(s): (Winds should be in compass direction e.g. N, NW, etc.)													
Place		Elevation	†Ob Time	20 ft. Wind Dir Speed		Eye Level Wind. Dir Speed		Temp. Dry Wet		Moisture RH DP		Remarks (Relevant Weather, etc)	
21. Requested Forecast Period Date		22. Primary Forecast Elements (Check all that are needed) (for management ignited wildland fires, provide prescription parameters):				23. Remarks (other needed forecast elements, forecast needed for specific time, etc.)							
Start		Needed:											
End		Sky/Weather											
Forecast needed for:		Temperature											
Today		Humidity											
Tonight		20 ft Wind											
Day 2		Valley											
Extended		Ridge Top											
Other (Specify in #23)													
24. Send Forecast to: ATTN:		25. Location:				26. Phone Number: Fax Number:							
27. Remarks (Special requests, incident details, Smoke Dispersion elements needed, etc.):													
EXPLANATION OF SYMBOLS: † Use 24-hour clock to indicate time. Example: 10:15 p.m. = 2215; 10:15 a.m. = 1015 Indicate local standard time or local daylight time													

WS FORM D-1
WS FORM D-1, January 2005 INSTRUCTIONS:

I. Incident Personnel:

1. Complete items 1 through 27 where applicable.
 - a. Example of weather conditions on site:

13. Weather Observations from project or nearby station(s):											
Place	Elevation	†Ob Time	20 ft. Wind		Eye Level Wind.		Temp.		Moisture		Remarks (Relevant Weather, etc.)
			Dir	Speed	Dir	Speed	Dry	Wet	RH	DP	
Unit G-50	1530'	0830	NW	6-8	NW	3-5	32		72		Observations from unit RAWS station, 50% cloud cover.

- b. If the incident (HAZMAT, SAR) involves marine, put the wave/swell height and direction in the Remarks section.
2. Transmit in numerical sequence or fax to the appropriate Weather Forecast Office. (A weather forecaster on duty will complete the special forecast as quickly as possible and transmit the forecast and outlook to you by the method requested)
3. Retain completed copy for your records.
4. **Provide feedback to NWS utilizing separate page.** Be sure to include a copy of the spot forecast with any feedback submission including forecaster's name. Feedback to NWS personnel is imperative to assist with future forecasts. Remember, feedback on correct forecasts is equally as valuable as feedback on incorrect forecasts! If spot forecast is significantly different than conditions on site, a second forecast may be required.

II. ALL RELAY POINTS should use this form to insure completeness of date and forecast. A supply of this form should be kept by each dispatcher and all others who may be relaying requests for forecasts or relaying completed forecasts to field units.

III. Forms are available from your local National Weather Service Weather Forecast Office. They may also be reproduced by other agencies as needed, entering the phone number and radio identification if desired.

NOTICE: Information provided on this form may be used by the National Weather Service for official purposes in any way, including public release and publication in NWS products. False statements on this form may be subject to prosecution under the False Statement Accountability Act of 1996 (18 U.S.C. § 1001) or other statutes.